

# Welcome to CAMEO!

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Welcome to CAMEO! This manual explains how to use the CAMEO<sup>®</sup> (Computer-Aided Management of Emergency Operations) software. It assumes that you already know how to use the Microsoft Windows or Macintosh computer on which you're using your copy of CAMEO.

Although it explains how to use the MARPLOT<sup>®</sup> and ALOHA<sup>®</sup> programs with other CAMEO components for various planning and response projects, it does not fully explain how to use these two programs (but it explains how to obtain the ALOHA and MARPLOT user's manuals).

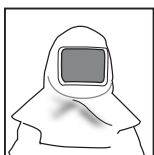
This chapter explains what CAMEO is, its basic functions, who designed it, and why and for whom it was developed. It explains how to get CAMEO and where to find technical support and training. It also explains about related software programs that might be useful to you.

## CAMEO in brief

CAMEO is a suite of software programs you can use to plan for and respond to chemical emergencies. It was developed for chemical emergency planners and responders by the CAMEO team. That team includes the U.S.

Environmental Protection Agency's Chemical Emergency Preparedness and Prevention Office (EPA CEPPO, online at [www.epa.gov/swercepp](http://www.epa.gov/swercepp)) and the National Oceanic and Atmospheric Administration's Office of Response and Restoration (NOAA OR&R, online at [response.restoration.noaa.gov](http://response.restoration.noaa.gov)). CAMEO includes a set of databases, or modules, a toxic gas dispersion model ("plume model") called ALOHA, and an electronic mapping program called MARPLOT. CAMEO runs on Microsoft Windows and Apple Macintosh computers.

You can use CAMEO in two main ways:



- To access, store, and evaluate information needed for emergency response to hazardous materials incidents. Firefighters, police officers, and other emergency workers know that a response can be hampered by lack of accurate information about the substance spilled and safe response actions. CAMEO is designed to help you quickly access just such information, just when you need it at the scene of a response.
- To develop hazardous materials emergency plans for your community. CAMEO is especially designed to help you meet the requirements of the Emergency Planning and Community Right-to-Know Act, or EPCRA (see "EPCRA" on page 266).

CAMEO was developed because NOAA recognized the need to assist first responders with easily accessible and accurate response information. Since 1988, EPA CEPPO and NOAA OR&R have collaborated to further development of CAMEO. The Bureau of the Census and the U.S. Coast Guard also have worked with EPA and NOAA to enhance CAMEO.

### **Who uses CAMEO?**

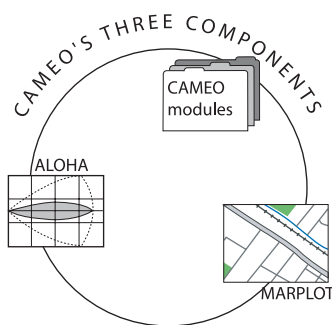
Within the U.S., CAMEO's primary users include firefighters, State Emergency Response Commissions (SERCs) and Tribal Emergency Response Commissions (TERCs), Local Emergency Planning Committees (LEPCs), industry, schools, environmental organizations, and police departments.

Outside of the U.S., CAMEO is in use in many countries and has been translated into French and Spanish (ALOHA has also been translated into Swedish and Korean). CAMEO was selected by the United Nations Envi-

ronment Programme (UNEP, [www.unep.org](http://www.unep.org)) as a tool for helping developing nations prepare for and respond to chemical accidents, and is part of the UNEP's Awareness and Preparedness for Emergencies at the Local Level (APELL) program. It has been demonstrated or taught in about 50 countries as part of the APELL workshops on community preparedness for chemical accidents.

### CAMEO's three components

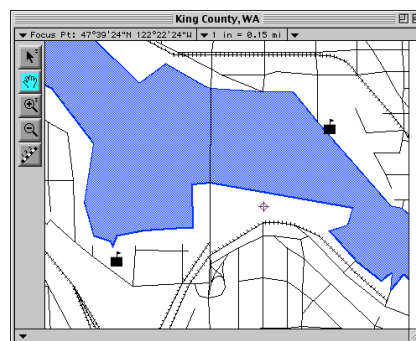
CAMEO contains three integrated components:



**The CAMEO modules.** A set of databases, or **modules**, contains information for responders and planners. You can quickly search the Chemical Library module for information and response recommendations for more than 6,000 hazardous substances. The Chemical Library contains information and recommendations on fire and explosive hazards, health hazards, firefighting techniques, cleanup procedures, and protective clothing recommendations (a view of a record in the Library is shown above). You can use other CAMEO modules to maintain records on facilities that store chemicals, the inventories of chemicals at those facilities ("Tier II data"), emergency planning resources and contacts, and special locations such as schools and hospitals that you might need to contact quickly during an emergency. See "CAMEO's modules in brief" on page 22 for descriptions of all of CAMEO's modules.

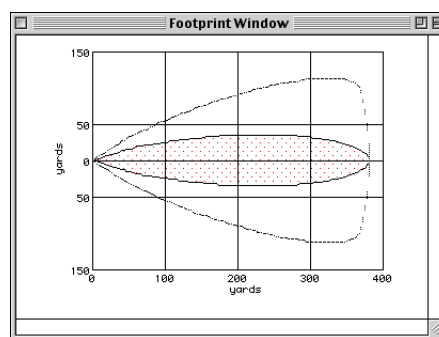
The screenshot shows a web-based interface for the Chemical Library. At the top, there is a "Navigator" bar with a "List" button. Below this is a search bar labeled "Chemical Name" containing the text "HEXACHLOROACETONE". The main content area is divided into two columns: "Chemical Identification Information" and "Response Information Data Sheets". Under "Chemical Identification Information", there are tabs for "Firefighting", "Fire Hazards", "Non-Fire Response", "Health Hazards", and "Protective Clothing". The "Firefighting" tab is selected, showing a "General Description" section with the text: "A yellow colored liquid. Slightly soluble in water and denser than water. Vapor are much heavier than air. Irritates skin and eyes. May be toxic by ingestion or inhalation. Used to make other chemicals (© AAR, 1999)." The "Response Information Data Sheets" column is currently empty.

**MARPLOT.** MARPLOT (Mapping Applications for Response, PLanning, and Operational Tasks) is CAMEO's mapping program. You can use it to view and print maps of your community that show roads, facilities, schools, response assets, and other information useful for response and planning tasks (like the Seattle map shown at right). On your maps, you also can overlay predicted



hazard zones—areas that could be contaminated by potential or actual chemical releases—so you can assess potential impacts. MARPLOT maps are created from U.S. Bureau of Census TIGER/Line files, and can be downloaded at no cost from the Web. (See “Using MARPLOT with CAMEO” on page 177 to learn how CAMEO and MARPLOT work together; for a full, detailed explanation of how to use MARPLOT, download the MARPLOT user's manual from [www.epa.gov/ceppo/cameo/marplot.htm](http://www.epa.gov/ceppo/cameo/marplot.htm).)

**ALOHA.** ALOHA (Areal Locations of Hazardous Atmospheres) is a gas dispersion model. You use it to estimate how far downwind a chemical cloud might disperse. ALOHA's predictions are based on the characteristics of the released chemical, atmospheric conditions, and the circumstances of the release. ALOHA displays a “cloud footprint” that you can plot



on a map in MARPLOT (an ALOHA footprint is shown above). On the same map, you also can check the locations of vulnerable locations such as hospitals and schools to see which ones could be affected by a gas release. You then can extract information such as emergency phone numbers for these locations from CAMEO modules. (See “Using ALOHA with MARPLOT and CAMEO” on page 189 to learn how ALOHA works together with CAMEO and MARPLOT; for a full detailed explanation of how to use

ALOHA, download the ALOHA user's manual from [www.epa.gov/ceppo/cameo/aloha.htm](http://www.epa.gov/ceppo/cameo/aloha.htm).)

## **CAMEO supports EPCRA planning work**

CAMEO was designed to help you to meet your responsibilities under EPCRA, the Emergency Planning and Community Right-to-Know Act of 1986. EPCRA establishes requirements for Federal, state, and local governments, and for industry for emergency planning and “community right-to-know” reporting on hazardous and toxic chemicals (see “EPCRA” on page 266). You can use CAMEO for EPCRA-related tasks like:

- maintaining and reviewing Tier II information submitted by facilities in your local area (see “Tier II information and CAMEO” on page 106).
- assessing the hazards to your community from accidental releases of locally stored hazardous chemicals (see “Using Screening & Scenarios to assess hazards” on page 137).

**CAMEO and the Clean Air Act.** Many CAMEO users, especially facility operators, also must meet certain responsibilities under Section 112(r) of the Clean Air Act (CAA) Amendments of 1990 (see “CAA 112(r)” on page 275). You may be able to use CAMEO for some of your CAA-related projects. For example, you can check a substance's Chemical Library record to find out whether the substance is covered under Section 112(r), and, if it is, to see the threshold quantity designated for it under Section 112(r). However, note that you cannot use CAMEO's Screening & Scenarios module for the offsite consequence analyses required under Section 112(r). For more on this topic, see “What are the differences between Screening & Scenarios, ALOHA, and RMP endpoint distances?” on page 152.

## **CAMEO and terrorism**

CAMEO's Chemical Library and the ALOHA gas dispersion model were designed to help people plan for and respond to accidents involving industrial chemicals, rather than deliberate releases of chemical or biological warfare agents. For people concerned with planning for or responding to terrorist attacks, the two programs can be most useful for planning for or

responding to terrorist actions that result in releases of industrial chemicals. However, some substances that are considered as nerve agents rather than industrial chemicals are included in the Chemical Library and in ALOHA's built-in chemical database. Examples of nerve agents in the Chemical Library and/or ALOHA database include tabun, sarin, V agent, mustard gas, lewisite, hydrogen cyanide, cyanogen chloride, chlorine, phosgene, tear gas, and mace® (chloroacetophenone).

Not all common nerve agents are included in ALOHA. Included are only those expected to be volatile enough on their own (without use of explosives) to get into the air in high enough concentrations to pose a hazard to people. Most nerve agents, in contrast, are oily liquids with very low vapor pressures. If you're considering using ALOHA in response or planning for nerve agent attacks, we encourage you to carefully review the discussion of ALOHA's limitations in the ALOHA user's manual and online at [response.restoration.noaa.gov/comeo/aloha.html](http://response.restoration.noaa.gov/comeo/aloha.html). ALOHA can't model nerve agent scenarios that involve indoor releases, releases requiring an explosive propellant, mixtures of chemicals, or nerve agents that exhibit low volatility at ambient temperatures. If you need to do sophisticated modeling of realistic deliberate nerve agent release scenarios, we recommend that you contact chemical warfare specialists for help, rather than relying on CAMEO and ALOHA.<sup>1</sup>

## Getting CAMEO

You can obtain a free copy of CAMEO by downloading it from the CAMEO website, [www.epa.gov/ceppo/comeo](http://www.epa.gov/ceppo/comeo). To install the software, follow the instructions in Chapter 2, "Installing CAMEO," beginning on page 13.

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1. One source of brief advice for responders on chemical, biological, and nuclear agents is the Operations Center of the Defense Threat Reduction Agency, 703-325-2102.

## Getting training and staying informed

To learn CAMEO basics, work through “A CAMEO guided tour” on page 33. Later, you may want to browse through the following sections of this manual that describe how to complete key CAMEO tasks. If you’re interested in

- reviewing CAMEO’s response recommendations and other information about substances of concern, check “Searching for a Chemical Record” on page 78 and “Understanding the information in the Chemical Library” on page 83.
- adding records describing chemical facilities and their chemical inventories, check “Creating and editing facility records” on page 120.
- importing or exporting data to or from CAMEO, including Tier II data importing, check Chapter 7, “Importing and Exporting Data,” beginning on page 193.
- planning how you’ll use your CAMEO system, on or off a network, check “A CAMEO management plan” on page 225.

### The CAMEO Website

Check the CAMEO Website ([www.epa.gov/ceppo/cameo](http://www.epa.gov/ceppo/cameo)) for more CAMEO-related resources. You can:

- view news items and download software updates and training materials.
- discuss problems, concerns, and questions with other CAMEO users in the Technical Discussion section.
- troubleshoot CAMEO, ALOHA, or MARPLOT problems, using the CAMEO Troubleshooter ([www.epa.gov/ceppo/cameo/shoot.htm](http://www.epa.gov/ceppo/cameo/shoot.htm)).
- check CAMEO training and events calendars ([www.epa.gov/ceppo/cameo/cam-evnt.htm](http://www.epa.gov/ceppo/cameo/cam-evnt.htm)). Trainers certified by NOAA and EPA run frequent CAMEO and ALOHA training events around the U.S., and sometimes in other countries as well.

## **The CAMEO News Service**

We encourage you to subscribe to the CAMEO News Service, an email announcement list (one-way listserve) used by CAMEO managers and developers to keep the CAMEO community informed. Bulletins are sent to list subscribers on an approximately monthly basis. This manual describes resources and information available to you as of spring 2002; subscribing to the news service is a way to get access to updated information. Check the CAMEO website to find out how to subscribe to the CAMEO News Service.

## **Three other programs for CAMEO users**

### **Tier2 Submit™**

Each year, facilities covered by the Emergency Planning and Community Right to Know Act (EPCRA) must submit an emergency and hazardous chemical inventory form to their Local Emergency Planning Committee (LEPC), State Emergency Response Commission (SERC), and local fire department. Facilities provide either a Tier I or Tier II form. Most states require the Tier II form. Tier II forms require basic facility identification information, employee contact information, and information such as storage amounts, storage conditions, and locations for chemicals stored or used at the facility. (See “Sections 311 and 312: community right-to-know requirements” on page 270.)

Tier2 Submit is a free chemical inventory software program (new in 2002) developed by the CAMEO development team for both reporting facilities and for state and local emergency responders:

- Facilities can use Tier2 Submit to manage, print, and send electronic Tier II reports.
- State and local emergency responders can import those facilities’ reports directly into their copies of CAMEO. By importing facility reports,



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### Three other programs for CAMEO users

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responders can have current chemical inventory information available to them if they need to respond to an incident at a reporting facility.

The reporting year 2001 is the first reporting year that Tier2 Submit has become available. As of early 2002, not all states are accepting paper or electronic reports from Tier2 Submit. Please check [www.epa.gov/ceppo/tier2.htm](http://www.epa.gov/ceppo/tier2.htm) to find out whether your state is participating this year and/or to download a copy of Tier2 Submit.

### LandView®

LandView incorporates a database management system along with the MARPLOT mapping program. You can use LandView not only to view maps of U.S. counties or other geographic areas but also to work with environmental and census data describing those counties, contained in databases from the U.S. Environmental Protection Agency, the Bureau of the Census, and the U.S. Geological Survey. For example, you can estimate the population and number of housing units within a given radius from a location such as a chemical facility. To learn more about LandView or to purchase a copy, visit the LandView website at [landview.census.gov](http://landview.census.gov) or call the Census Geography Division at (301) 457-1128.

### RMP\*Comp

RMP\*Comp is a free program you can use to complete the offsite consequence analyses (both worst case scenarios and alternative scenarios) required under the Risk Management Planning Rule, which implements Section 112(r) of the 1990 Clean Air Act (see “CAA 112(r)” on page 275). You can download RMP\*Comp or obtain more information about Section 112(r) from [www.epa.gov/ceppo/tools/rmp-comp/rmp-comp.html](http://www.epa.gov/ceppo/tools/rmp-comp/rmp-comp.html). Offsite consequence analyses are like the hazards analyses required under EPCRA, but they aren’t quite the same. If you’re confused by the apparent similarities and not sure what the differences are, review “What are the differences between Screening & Scenarios, ALOHA, and RMP endpoint distances?” on page 152.

## What's new?

### What's been changed in this version of CAMEO?

**A new database program.** This version of CAMEO runs in FileMaker, a relational database program. The previous versions of CAMEO were developed in HyperCard on the Macintosh and in FoxPro for Windows computers. This version is identical on both Macintosh and Windows computers. The data file structure in this version is similar to that in the previous version of CAMEO for Windows.

**Searching.** CAMEO now includes a single search module, which you'll use for all your searches. You can make either basic or advanced searches of any CAMEO modules, and you can save advanced search criteria for later reuse (see "Searching" on page 251).

**Cross-platform look and feel.** CAMEO now looks and acts nearly identically on both Windows and Macintosh computers.

### What's been added to this version of CAMEO?

**Chemical reactivity prediction.** You now can use CAMEO to predict potential reactivity between two or more chemicals, if they are mixed together. This is the same functionality that's also available in the Chemical Reactivity Worksheet ([response.restoration.noaa.gov/chemaids/react.html](http://response.restoration.noaa.gov/chemaids/react.html)).

### What's been left out of this version of CAMEO?

**Site Plan Viewer.** Site Plan Viewer was a component of the previous version of CAMEO for Windows, and is not included in this version. In this version of CAMEO, you can use any graphics program to create site plans, save them in any standard graphic file formats, and then include them with your facility records in CAMEO (see "Adding and editing site plans" on page 121).

**Census Data.** The Census Data module has been removed from CAMEO because you now can use LandView when you need to analyze demographic data.

**TRI.** The Toxic Release Inventory module has been removed from CAMEO because you now can work with TRI data either in LandView or online at the Toxics Release Inventory: Community Right-to-Know Home Page, [www.epa.gov/tri](http://www.epa.gov/tri).<sup>2</sup>

**Password protection.** CAMEO no longer requires the use of passwords, because the password protection implemented in earlier versions caused difficulties for many users. However, you can use passwords with your copy of CAMEO if you'd like to (see "Password protection" on page 230).

### **If you're a FileMaker user**

CAMEO was created in a "runtime" version of the FileMaker database program. You can run CAMEO without installing the full version of FileMaker on your computer. If you're already a FileMaker user, note that it's possible to damage CAMEO if you're using FileMaker with it. To learn the details, and how to avoid damaging your CAMEO system, review "Using CAMEO if you already have FileMaker" on page 241.

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2. EPA must maintain records of toxic chemical emissions from certain facilities, and must use this information in research and in preparation of guidelines and regulations. This EPA module is called the Toxics Release Inventory (TRI). Facilities subject to these reporting requirements must submit annual reports of total amounts of chemicals released to the environment (both routinely and accidentally) to the EPA and to state officials.

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